ABSTRACT

Unani medicine, with its rich history of natural therapeutics, emphasizes polyherbal formulations for treating a variety of ailments. This study investigates five formulations: Majoon-E-Najah (MN), Sufoof-E-Najah (SN), Sufoof-E-Chobchini (SC), and two novel formulations (F1 and F2), which are explored for the first time in this context. MN, a semi-solid formulation, is traditionally used as a blood purifier and nervine tonic, primarily for neurological disorders such as melancholia, colic, and hysteria. SN, a powdered derivative of MN, retains similar therapeutic properties for neurological conditions. SC, a polyherbal powder, is valued for its anti-inflammatory and analgesic effects, commonly used for joint pain, gout, syphilis, and sciatica. F1 and F2, novel formulations, target female reproductive health, with F1 serving as an aphrodisiac and uterotonic, and F2 enhancing immunity and exhibiting antidiabetic, antimicrobial, and antioxidant properties.

An ethnobotanical survey conducted across Northwest Gujarat during 2020–2021 documented 137 medicinal plant species, 84 of which are referenced in the Unani system of medicine, highlighting the phytodiversity and traditional usage of these plants. This study provides a foundational database for Unani pharmacology. The formulations were authenticated, standardized, and evaluated for their organoleptic properties. Extraction efficiencies, determined using aqueous, hydroalcoholic, and ethanolic solvents with reflux, sonication, and Soxhlet methods, showed significant variability among formulations. HPTLC fingerprinting and HR-LCMS-QTOF analyses revealed detailed chemical profiles, supporting the identification of bioactive compounds.

Pharmacological evaluations demonstrated the antibacterial and antifungal activities of the formulations against *Escherichia coli*, *Bacillus megaterium*, *Candida albicans*, and *Aspergillus niger*. Ethanolic and hydroalcoholic extracts exhibited superior antimicrobial effects, while the DPPH assay revealed that ethanolic extracts of MN, SN, and SC exhibited the strongest antioxidant activity. Aqueous and hydroalcoholic extracts showed higher efficacy for F1 and F2. Phytochemical analysis quantified total phenolic content (TPC) and total flavonoid content (TFC), with ethanolic extracts of MN and SC being rich in both, while SN, F1, and F2 showed higher yields in aqueous and hydroalcoholic extracts.

The Present study, first of its kind to comprehensively evaluate these five formulations in relation to the current objectives, contributes to their standardization, quality assurance, and purity

assessment. The findings underscore the therapeutic potential of these formulations, particularly F1 and F2, as novel natural agents for modern healthcare applications, supporting their integration into contemporary medicinal practices.

Keywords: Pharmacological evaluation, Phytochemical characterization, Polyherbal Formulation, Unani medicine.